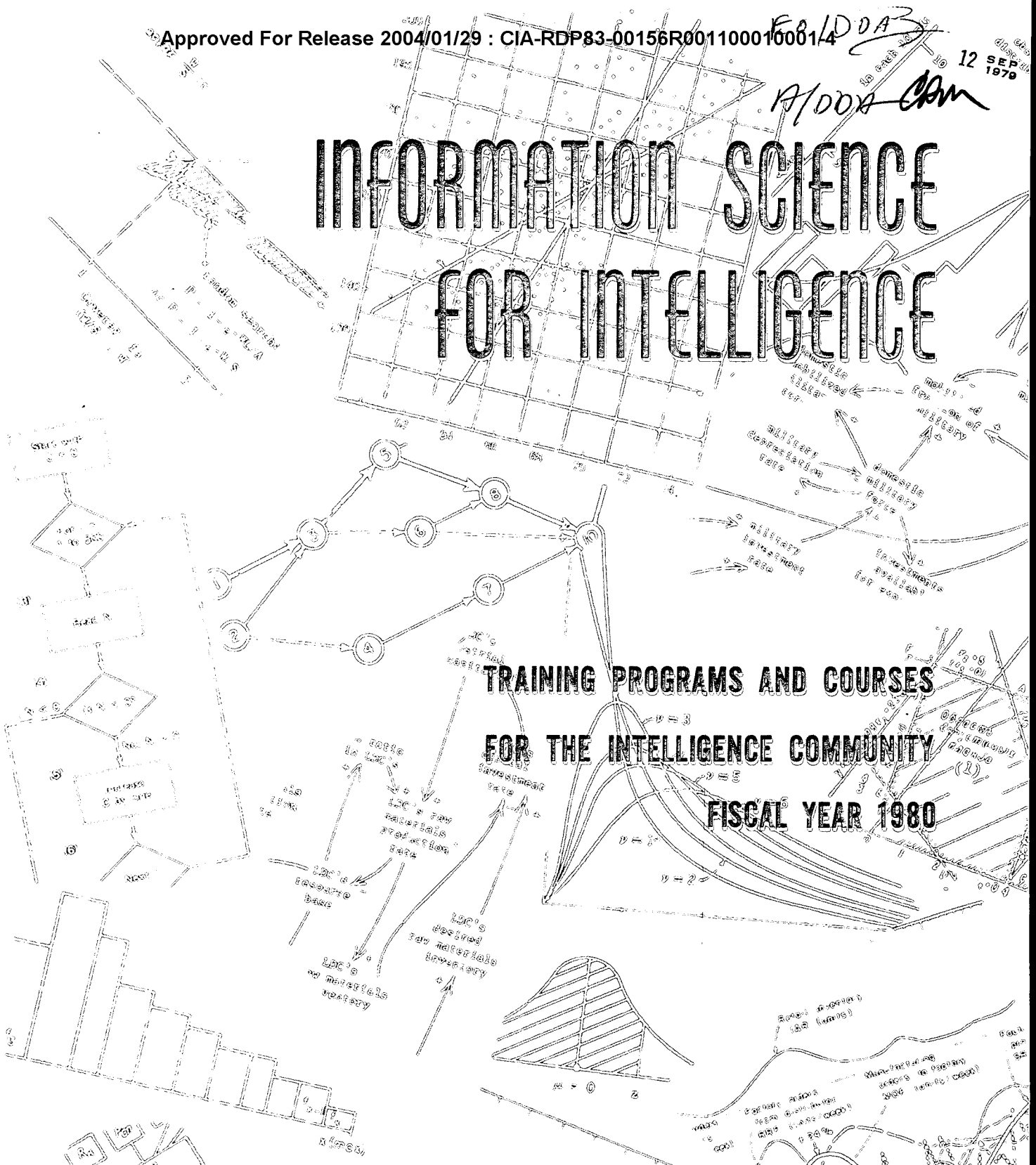
INFORMATION SCIENCE FOR INTELLIGENCE



TRAINING PROGRAMS AND COURSES FOR THE INTELLIGENCE COMMUNITY FISCAL YEAR 1980

INFORMATION SCIENCE CENTER OFFICE OF TRAINING
CENTRAL INTELLIGENCE AGENCY WASHINGTON, D.C., 20505

PREFACE

The Information Science Training Program is conducted for personnel from all agencies of the Intelligence Community. Individual courses stress the **application and use** of information science and systematic methods of analysis in the collection and analysis of intelligence, in management, operations, and the support functions.

Courses are conducted in classrooms with time-sharing computer terminals which can access several major computer systems. Instructors come from several intelligence agencies, and represent a broad range of practical experience in intelligence, management, industry, information science, and teaching. Most of the instructors have advanced academic credentials in these fields, hold part-time teaching positions in local universities, and are active in professional societies.

These courses emphasize the **user and applications**. They focus on student exercises, real problem-solving, and the application of systematic methods of analysis. The use of computer systems is taught as a medium for applying many of these methods.

The Program is open to personnel of all intelligence agencies and activities.

Information Science Center
Office of Training
Central Intelligence Agency

RATIONALE STATEMENT FOR THE INFORMATION SCIENCE CENTER

The Information Science Center embodies a special commitment to understanding and solving problems which arise out of the interrelationships between people, organizations, information, and technology.

The underlying rationale for the Center's training programs and related activities is based on five fundamental ideas:

First, that to acquire the ability to view the world in terms of systems—components connected together for a purpose—is to acquire a powerful, effective instrument for tackling many practical analysis and management problems in intelligence.

Second, that effective analysis and management requires a holistic approach to problem-solving which couples informed judgment with the best available analytical techniques.

Third, that educated, informed analysts, as well as managers in the contemporary intelligence environment, must have a basic understanding of the computer and of the social and organizational implications of emerging computer technology.

Fourth, that information and its manipulation—its generation, acquisition, ordering, formulation, communication, and end use for various purposes—have become central to the operation of modern organizations and must, therefore, be central to the training of contemporary analysts and managers.

Finally, that to respond adequately to today's problems and to future needs, intelligence officers must be taught not only how to maintain present systems and respond to immediate well-defined needs, but how to engage in long-term planning effectively and humanely.

SCHEDULE OF COURSES

FISCAL YEAR 1980

Applied Analytical Techniques (two weeks)

10	March	1980	21	March	1980
22	September	1980	3	October	1980

Basic Statistical Concepts for Analysts and Managers (two weeks)

26	November	1979	7	December	1979
25	February	1980	7	March	1980
2	June	1980	13	June	1980
8	September	1980	19	September	1980

Decision Analysis (one week)

10	December	1979	14	December	1979
21	April	1980	25	April	1980
18	August	1980	22	August	1980

Information Science for Managers (one week)

5	November	1979	9	November	1979
21	January	1980	25	January	1980
28	April	1980	2	May	1980
28	July	1980	1	August	1980

Survey of Intelligence Information Systems (three weeks)

15	October	1979	2	November	1979
28	January	1980	15	February	1980
9	June	1980	27	June	1980

System Dynamics: Principles and Applications (two weeks)

7	January	1980	18	January	1980
5	May	1980	16	May	1980
8	September	1980	19	September	1980

Approved For Release 2004/01/29 : CIA-RDP83-00156R001100010001-4

PROCEDURE FOR ENROLLMENT

SECURITY:

TOP SECRET security clearance is required for all courses. In addition, SI/SAO certification is required for the **Survey of Intelligence Information Systems** course. The applicant's agency or department should be prepared to transmit clearances by TWX or memo to CIA, [redacted] Attention: SO/OTR, citing student name, social security number, date and title of course, as well as clearance status. These certifications should not be transmitted until agency and department training officers are notified of the acceptance of their nominees.

STAT

TIME:

All courses are full-time, 0900 to 1600 daily.

LOCATION:

New and improved facilities are at 4600 Fairfax Drive, Arlington, Virginia (Chamber of Commerce Building). Detailed instructions on directions to the building and on parking will be mailed to students prior to start of the course.

REGISTRATION:

Requests for enrollment should be submitted to training officers in each agency or department. They will then prepare a memorandum which will contain, in priority order, the names, grades or ranks, and social security numbers of the applicants. This memorandum must be received at the following address no later than three weeks prior to commencement of the course:

CENTRAL INTELLIGENCE AGENCY
OFFICE OF TRAINING
INFORMATION SCIENCE CENTER
WASHINGTON, D.C. 20505 (STOP 64)

Notifications of student acceptance will be made by phone to agency and department training officers ten days before start of the course.

For information on registration or course content call CIA, Office of Training, Information Science Center, [redacted] STA

CIA PERSONNEL ONLY, submit Form 73, "Request for Internal Training," to OTR Registration, 822 C of C, [redacted] STA

INFORMATION SCIENCES TRAINING PROGRAM

FISCAL YEAR 1980

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
APPLIED ANALYTICAL TECHNIQUES (2 WEEKS)						10 21						22 3	
BSCAM (2 WEEKS)		26 7			25 7				2 13			8 19	
DECISION ANALYSIS (1 WEEK)			10 14				21 25				18 22		
MANAGERS (1 WEEK)		5 9		21 25			28 2			28 1			
SURVEY (3 WEEKS)	15 2			28 15					9 27				
SYSTEM DYNAMICS (2 WEEKS)				7 18				5 16				8 19	

APPLIED ANALYTICAL TECHNIQUES

(two weeks)

Description

The **Applied Analytical Techniques (AAT)** course is designed to teach fundamental skills in the application of selected information science methodologies to problems in intelligence analysis, management, collection, production, and support. Each student will solve a number of intelligence problems by both manual and computer methods.

Objectives

The objectives are to provide each student with:

1. The fundamental skills needed to use several applied analytical techniques.

2. The ability to recognize intelligence analysis and management problems which may be solved by application of these techniques.

3. The ability to identify the basic capabilities, limitations, and applications of systematic methods of applied analytical techniques.

4. The capacity to determine the type of information needed to apply each technique.

Eligibility

Analysts and managers at all levels whose responsibilities may require a fundamental knowledge of applied analytical techniques.

Each participant should have a fundamental knowledge of algebra and of probability and statistics. If the participant has not had previous training in statistics, it is recommended that the **Basic Statistical Concepts for Analysts and Managers (BSCAM)** course, or its equivalent, be completed prior to enrollment in this course.

APPLIED ANALYTICAL TECHNIQUES

Typical Course Content

Linear Programming and Resource Allocation

Queuing Analysis

Network Analysis

Performance Evaluation Review Technique (PERT)

Correlation and Regression

Subjective Probability Assessment

Bayesian Analysis

DATES

10 March 1980 — 21 March 1980
22 September 1980 — 3 October 1980

BASIC STATISTICAL CONCEPTS FOR ANALYSTS AND MANAGERS

(two weeks)

Description

The **Basic Statistical Concepts for Analysts and Managers (BSCAM)** course stresses basic concepts of probability and statistics and their application to intelligence problems. It is designed to provide a fundamental, substantive background from which information science methodologies useful to intelligence collection, production, analysis, support, and management can be understood and learned. The course can be used, by those needing preliminary instruction, to provide substantive background for the **Applied Analytical Techniques (AAT)** course.

The content of BSCAM is oriented to those with an elementary mathematics background. Each student solves a number of problems by both manual and computer methods.

Objectives

The objectives are to provide each student with:

1. An understanding of the fundamental concepts and terms of probability and statistics.

2. The skills needed to make elementary probabilistic and statistical evaluations.

3. A familiarization with computerized statistical programs available on Community computer systems.

4. The ability to recognize appropriate uses of statistical techniques in intelligence analysis and management problems.

Eligibility

Analysts and managers at all levels whose responsibilities may require a fundamental knowledge of probability and statistics.

BASIC STATISTICAL CONCEPTS FOR ANALYSTS AND MANAGERS

Typical Course Content

Data Types, Metrics, and Uses

Descriptive Statistics

Marginal and Joint Probability

Conditional Probability

Combinations and Permutations

Probability Distributions

Sampling Distributions

Confidence Intervals

Hypothesis Testing

DATES

26	November	1979	—	7 December	1979
25	February	1980	—	7 March	1980
2	June	1980	—	13 June	1980
8	September	1980	—	19 September	1980

DECISION ANALYSIS

(one week)

Description

Decision Analysis provides a systematic method of handling consideration of uncertainty (probability) and value (utility) when examining problems relating to the management and production of intelligence. The method is being used in a variety of intelligence-related situations and should find increasing use in the near future.

This course provides an overview of the methods of decision analysis. Emphasis is placed on defining situations where the techniques can be applied and applying them using computer assistance.

Objectives

Participants will be able to:

1. Understand the basic principles of decision analysis.
2. Determine when decision analysis could be useful in analyzing intelligence and management problems.
3. Apply decision analysis at a rudimentary level.
4. Communicate effectively with others who may be using the methods of decision analysis.

Eligibility

Analysts and managers at all levels whose responsibilities may require a knowledge of the methods of decision analysis. The content of the course is oriented to those with an elementary mathematics background.

DECISION ANALYSIS

Typical Course Content

Decision Under Conditions of Certainty, Risk, and Uncertainty

Probability Concepts

Utility Theory

Multi-attribute Utility

Bayesian Analysis

Decision Matrix

DATES

10	December	1979	—	14 December	1979
21	April	1980	—	25 April	1980
18	August	1980	—	22 August	1980

INFORMATION SCIENCE FOR MANAGERS

(one week)

Description

This course stresses the application of information systems and systematic methods of analysis by systems users to a variety of intelligence, support, and management tasks. The content of the course is readily understood by those with no scientific, technical, or computer training.

The student receives a fundamental knowledge of probability, decision trees, statistics, network analysis, linear programming, decision-making, modeling, and other systematic methods of analysis and management science.

Objectives

Participants will:

1. Understand some of the terminology and basic techniques of information science to the extent that they can communicate and collaborate with systems professionals.

2. Expand their recognition of the range of methods capable of being applied in the analysis of intelligence problems and in the decision-making tasks of their organization.

3. Gain an awareness of the use of systematic methods of analysis in the management, production, and collection of intelligence.

Eligibility

GS-11 officers and above, and those with equivalent military rank, who hold a professional level assignment in an intelligence organization. No previous technical, scientific, math, or computer training is necessary.

INFORMATION SCIENCE FOR MANAGERS

Typical Course Content

Information Science and Management

Computer System Fundamentals

Statistics and Probability

PERT and Critical Path Method

Linear Programming

DATES

5	November	1979	—	9 November	1979
21	January	1980	—	25 January	1980
28	April	1980	—	2 May	1980
28	July	1980	—	1 August	1980

SURVEY OF INTELLIGENCE INFORMATION SYSTEMS

(3 weeks)

Description

This interagency course is designed to introduce professional intelligence personnel to information handling systems and their applications in the Intelligence Community.

Field trips to DIA, NSA, CIA, and other Community agencies will acquaint the student with the character of intelligence information available from each agency, and the major automated information storage and retrieval systems used by each agency. The role of computer-based information handling systems in the production and dissemination of intelligence will be emphasized. Selected developments throughout the Intelligence Community will be described by members of the Information Science faculty and guest speakers.

Objectives

The course objectives are to:

1. Introduce the student to the major Intelligence Community automated information storage and retrieval systems.

2. Show the student a sample of the information available in the Intelligence Community.

3. Acquaint the student with a sample of the activities accomplished by Intelligence Community offices with the aid of automated data processing.

4. Introduce the student to individuals in other offices and agencies who can provide assistance with ADP applications or problems.

Eligibility

GS-09 through 15 officers, or those with equivalent military rank, whose responsibilities require a knowledge of the information handling systems in use in the Intelligence Community. No previous technical or scientific education or training is necessary.

SURVEY OF INTELLIGENCE INFORMATION SYSTEMS

Typical Course Content

Information Systems of DIA, State, NSA, CIA, and other agencies

Information Flow and Crisis Management

State of the Art in Information Systems

Communications and ADP Security

Data Bases and Their Content

Non-Automated Information Systems

DATES

15 October	1979	—	2 November	1979
28 January	1980	—	15 February	1980
9 June	1980	—	27 June	1980

SYSTEM DYNAMICS: PRINCIPLES AND APPLICATIONS

(2 weeks)

Description

STAT

System Dynamics, a relatively new methodology developed by [redacted] can be used to analyze a broad spectrum of problems relating to the production and management of intelligence. These techniques are being used in a variety of intelligence studies, and it is anticipated that the methodology will find increasing use in many areas of intelligence concern.

This course covers all facets of the System Dynamics methodology. Illustrative studies relevant to intelligence interests are used throughout the course to demonstrate the applicability of the methodology. Students are given firsthand experience in using and developing System Dynamic models through the use of remote computer terminals.

Objectives

Participants will be able to:

1. Determine when System Dynamics could be useful in analyzing intelligence or management problems.

2. Apply the System Dynamics methodology at a rudimentary level.

3. Communicate effectively with others who may be using the System Dynamics methodology.

Eligibility

Analysts and managers at all levels whose civilian or military responsibilities may require a knowledge of the System Dynamics methodology. No previous technical or scientific education or training is necessary.

SYSTEM DYNAMICS: PRINCIPLES AND APPLICATIONS

Typical Course Content

Introduction to System Dynamics

Concepts and Conventions

Causal Loops and Feedback

Flow Diagrams

Simulation Program Development

Logic

Model Building Blocks

Validation

Workshops: Familiarization with the Computer Terminal

Model Building and Modification

Team Development of a Complete Model

Organizing and Conducting a System Dynamics Study

DATES

7 January	1980	—	18 January	1980
5 May	1980	—	16 May	1980
8 September	1980	—	19 September	1980

ISC

DDA
CIA/7D18 HQ
WASH., D.C. 20505

Approved For Release 2004/01/29 : CIA-RDP83-00156R001100010001-4